

Title (en)

Tool changing device which prevents chips adhering to tool

Title (de)

Werkzeugwechsler, der das Haften der Späne auf dem Werkzeug verhindert

Title (fr)

Dispositif de changement d'outil qui prévient l'adhésion de morceaux à l'outil

Publication

**EP 1454709 B1 20050921 (EN)**

Application

**EP 04005019 A 20040303**

Priority

JP 2003060428 A 20030306

Abstract (en)

[origin: EP1454709A1] A tool changing device of a machine tool which prevents chips adhering to a tool. By using a drive motor with which a tool changing device of the machine tool is usually provided, to vibrate the tool, the chips are prevented from adhering to the tool, especially to a tapered portion of the tool, and/or the chips adhered to the tool are removed, without using any additional device.

IPC 1-7

**B23Q 3/155**; **B23Q 11/00**

IPC 8 full level

**B23Q 3/155** (2006.01); **B23Q 11/00** (2006.01)

CPC (source: EP US)

**B23Q 3/15534** (2016.10 - EP US); **B23Q 3/1554** (2013.01 - EP); **B23Q 3/15722** (2016.10 - EP US); **B23Q 11/0053** (2013.01 - EP US); **B23Q 2003/155418** (2016.10 - EP US); **B23Q 2003/155428** (2016.10 - EP US); **B23Q 2003/155439** (2016.10 - EP US); **Y02P 70/10** (2015.11 - EP US); **Y10T 483/10** (2015.01 - EP US); **Y10T 483/11** (2015.01 - EP US); **Y10T 483/12** (2015.01 - EP US); **Y10T 483/15** (2015.01 - EP US); **Y10T 483/1755** (2015.01 - EP US); **Y10T 483/176** (2015.01 - EP US); **Y10T 483/1873** (2015.01 - EP US); **Y10T 483/1882** (2015.01 - EP US); **Y10T 483/19** (2015.01 - EP US)

Cited by

ITPI20120086A1

Designated contracting state (EPC)

DE

DOCDB simple family (publication)

**EP 1454709 A1 20040908**; **EP 1454709 B1 20050921**; CN 1287949 C 20061206; CN 1526513 A 20040908; DE 602004000091 D1 20060202; DE 602004000091 T2 20060713; JP 2004268177 A 20040930; JP 3764432 B2 20060405; US 2004176228 A1 20040909; US 7150705 B2 20061219

DOCDB simple family (application)

**EP 04005019 A 20040303**; CN 200410007760 A 20040305; DE 602004000091 T 20040303; JP 2003060428 A 20030306; US 79279204 A 20040305